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# A Description of the Immature Stages of *Herculia pelasgalis* (WALKER) (Lepidoptera, Pyralidae)

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The genus *Herculia* belongs to the Pyralinae and is represented by four species in Japan. However, no information on the immature stages of the genus has been available so far. Fortunately I got the larvae and pupae of *Herculia pelasgalis* which will be described in the following lines. Those specimens were reared from eggs laid by a captured female and were treated in 10% KOH solution and preserved in 70% ethanol for the examination.

## *Herculia pelasgalis* (WALKER, 1859)

Mature larva. Head width 2.3 mm, body length 27.5 mm.

Head: Wider than long, reddish brown with many dark maculation; posterior angle of frons about half of distance to occipital foramen. Seta AF2 longer than AF1; puncture AFa ventral to AF2; Pl very long, postero-lateral to AF1, P2 long, postero-dorsal to AF2; A2 short, almost equidistant from A1 and long A3; O1 short, just ventral to ocellus II; O2 very long, almost equidistant from O1 and O3. Labrum small and dark brown; seta La1 long, a little ventral to longest La2; puncture Ma slightly postero-dorsal to long M2; M3 short; inner surface with two epipharingeal setae. Mandible well developed and black, with three teeth, inner teeth well developed; anterior seta from postero-ventral margin about 2/3 as long as posterior one.

Thorax: Ochreous mottled with fuscous. Prothorax with prothoracic shield well developed, evenly reddish brown; prothoracic legs with coxae on both sides fused at midventral line. Seta XD1 almost as long as XD2; SD1 longest, nearer to XD2, situated on an extention line between XD1 and XD2; D2 long, a little caudal to a line combining D1 and SD2; L2 short, antero-dorsal to L1; SV2 short antero-lateral to SV1. Meso-and metathorax with coxae of both sides separated at bases; D setal group in a vertical position; SD2 short, antero-dorsal to L1 on T2 while that of T3 postero-dorsal to L1; L3 comparatively long, postero-lateral to long L1; SV1 long.

Abdomen: Broader than thorax, maximum width 3.2 mm; ochreous with pale fuscus marking. Prolegs with crockets arranged circle, biordinal, about 70 in total number. In 1st to 8th segments, seta D1 short; D2 postero-ventral to D1; SV1 long just dorsal to spiracle and SV2 minute, antero-lateral to spiracle except on 1st segment where SV1 is postero-dorsal and SV2 is antero-dorsal to spiracle, respectively: L1 long postero-ventral to short L2 on the same pinaculum; L3 very long in 1st to 7th

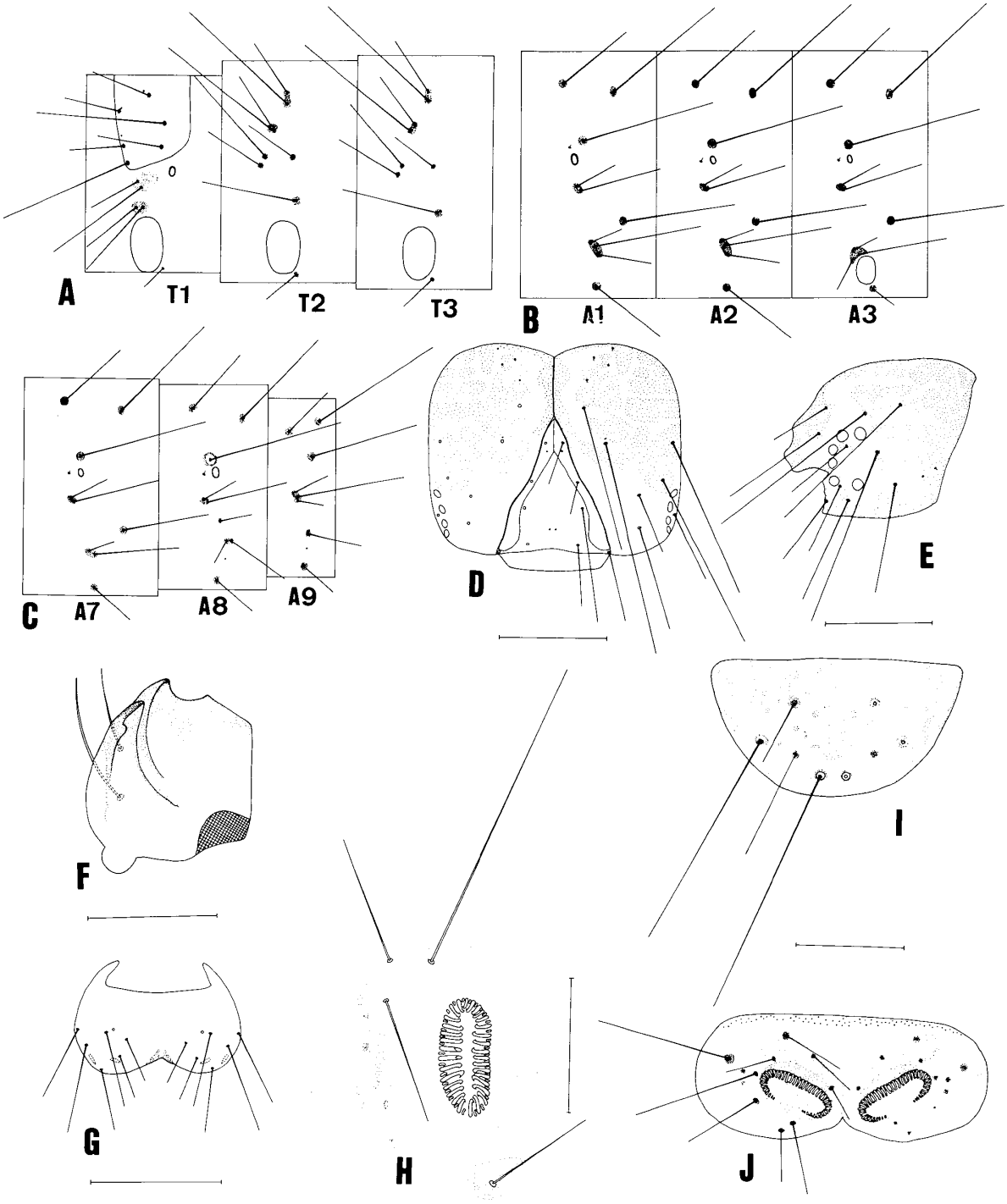


Fig. 1. Last instar larva of *Herculia pelasgalis* (WALKER). A－C. Setal map. A. Prothorax to metathorax; B. 1st to 3rd abdominal segments; C. 7th to 9th abdominal segments; D. Head, frontal view; E. *Ditto*, lateral view; F. Right mandible, inner view; G. Labrum, dorsal view; H. Left proleg of 3rd abdominal segment; I. Anal shield, dorsal view; J. 10th abdominal segment, ventral view. (Scale: D, E, I, J, 1.0 mm; F, G, H, 0.5 mm)

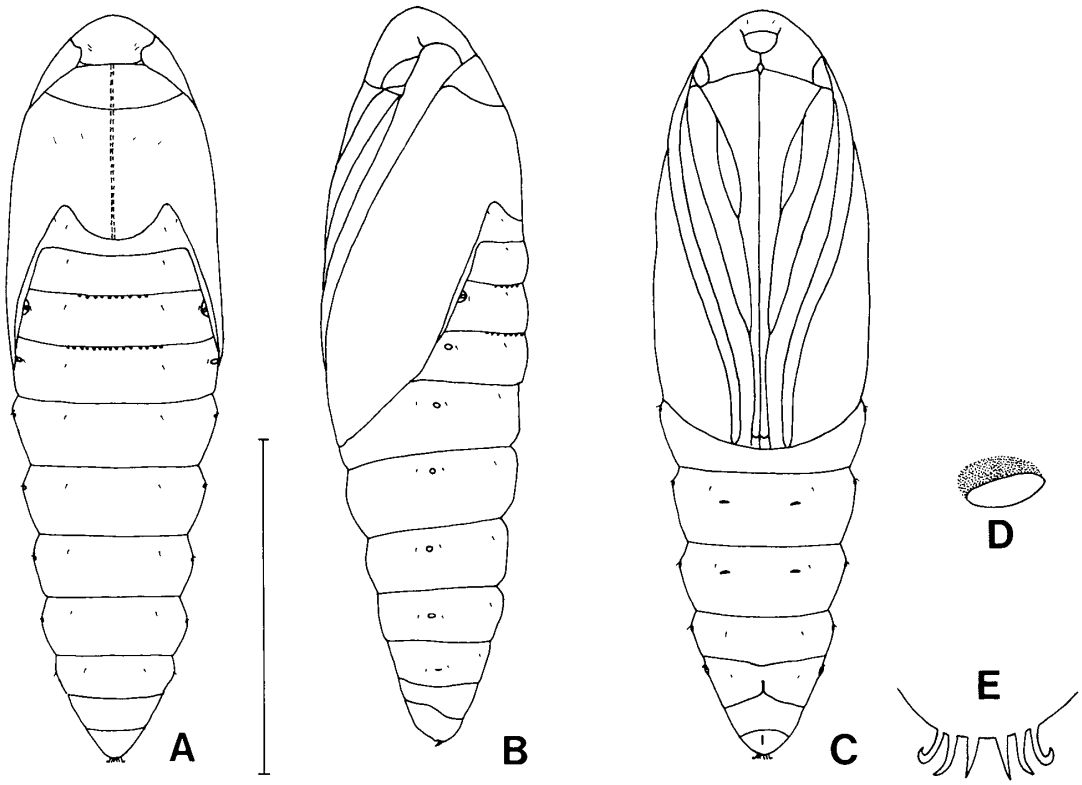


Fig. 2. Pupa of *Herculia pelasgalis* (WALKER). A. Dorsal view; B. Lateral view; C. Ventral view; D. Proleg scar of 5th abdominal segment; E. Cremaster (Scale: 5.0 mm)

segments, but short on 8th segment; number of SV setae, two on 7th and 8th, three on 1st to 6th segments, respectively; V1 long, especially on 1st and 2nd segments. Ninth segment with seta D1 almost equidistant from long D2 and SD1. L2 antero-dorsal to long L3, L1 and L3 vertically arranged on the same pinaculum; SV1 long equidistant from L3 and V1. Tenth segment with anal shield undeveloped; seta SD1 long postero-ventral to short SD2; D2 with light ring, longest about same length of the segment; D1 short, slender, longitudinal to SD2. And proleg with crockets mesal penellipse, biordinal, about 80 in total number.

Pupa (female) : Length 11.1 mm, width 3.3 mm. Body uniformly light reddish brown. Head with pilifer not clearly recognized; frons rounded, with F1 seta; maxilla longer, its apex reaching to near wing apex; antenna and mesothoracic leg usually extending to apical portion of forewing. Thorax wider than head, prothoracic leg ending at proximal 5/7 the length of wings; femur of prothoracic leg exposed; metathoracic leg appearing only in apical portion. Abdomen with several punctures on dorsal surface of anterior margin of 2nd and 3rd segments: cremaster with three pairs of processes of which the terminal pair is pointed directly, and the other ones are curved apically.

Materials examined: Three last instar larvae, and two pupae (male and female) reared from eggs laid by a female adult taken at Nabeta, Yatomi-cho, Aichi Pref. on 9. VII. 1986 (S. FUNAKOSHI).

Biological notes: The larvae were reared on *Trifolium repens* (L.). In room condition, the eggs hatched in about ten days and the larvae reached maturity in about 70 days. The pupation took place in early October. The duration of the pupal stage was about ten days. But, one larva stopped eating in November and began to overwinter. In the Tokai district, judging from the collection data of the adults, *Herculia pelasgalis* WALKER seemed to have two generations a year. Overwintering probably takes place in the last instar larval stage in the field.

Remarks: NAKAMURA (1984) described the immature stages of *Orthopygia glaucinalis* L. belonging to the Pyralinae. *Herculia pelasgalis* is different from the latter species in the following points: Larva with prothorax having shorter XD1 and XD2, about 2/5 as long as SD1, and with well developed pinacula on L and SV setae; meso-and metathorax with a pinaculum of L1 separated from that of L2; abdominal segments with SD2 setae much shorter. Pupa with 2nd and 3rd abdominal segments furnishing with a series of small punctures along anterior margins; caudial end of 10th abdominal segment with three pairs of processes of cremaster, while in *O. glaucinalis* with one pair of the processes and two pairs of setae which are curled at apices.

## Acknowledgement

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## Reference

NAKAMURA, M., 1984. On the early stages of *Orthopygia glaucinalis* LINNAEUS in Japan (Lepidoptera: Pyralidae). *Kitakyushu-no-Konchu,* **31**: 155－156, pl. 14. (In Japanese.)

## 摘　　要

*Herculia pelasgalis*（WALKER）アカシマメイガの幼生期（船越進太郎）

*Herculia* 属は日本から4種知られているものの，いずれも幼生期については未知であった．ここでは，アカシマメイガ *Herculia pelasgalis*（WALKER）の終齢幼虫と蛹の記載を行った．材料は野外で採集した雌成虫より採卵し，シロツメクサ *Trifolium repens* L. で飼育したものを用いた．また，中村（1984）が記載した同じシマメイガ亜科フタスジシマメイガ *Orthopygia glaucinalis* L. の幼虫・蛹との比較を行った結果，アカシマメイガ幼虫では前胸のLとSV刺毛硬皮板がよく発達し，中・後胸のL1の硬皮板がL2のそれと離れることなど，また，蛹では第2・3腹節に特徴的な点刻列があり，加えて第10節の尾突起の構造が異なることなどによって区別できることがわかった．